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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/495,982	02/01/2000	Christopher L. Jones	002821.P001x	5534

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EXAMINER

DIXON, THOMAS A

ART UNIT

PAPER NUMBER

3629

DATE MAILED: 08/30/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/495,982

Applicant(s)

JONES ET AL.

Examiner

Thomas A. Dixon

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 24 January 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 and 14-33 is/are rejected.
- 7) ☒ Claim(s) 11-13 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4,5,7.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).
2. Claims 1-3, 5-8, 10, 14-16, 18-21, 23-25, 27-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Luskin et al (5, 812,987).

As per Claim 1.

Luskin et al ('987) discloses:

generating return scenarios for each asset class of a plurality of asset classes based upon future scenarios of one or more economic factors, see figure 9 (807) and column 9, line 22 – column 10, line 30;

creating a mapping from each financial product of an available set of financial products onto one or more asset classes of the plurality of asset classes by determining exposures of the available set of financial products to each asset class of the plurality of asset classes, see figure 6 (900) and column 7, line 47 – column 8, line 7;

determining expected returns and volatility of returns for each of a plurality of portfolios on the efficient frontier based upon the mapping, each of the plurality of

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portfolios including combinations of financial products from the available set of financial products, see column 4, lines 26-43 and column 9, line 22 – column 10, line 30;

identifying a recommended portfolio of the plurality of efficient portfolios that maximizes an expected utility of wealth for a part, see column 7, line 5 – column 8, line 7.

As per Claim 2, 15, 24.

Luskin et al ('987) further discloses the expected returns and volatility of returns for each of the plurality of portfolios on the efficient frontier are determined analytically, see column 9, line 22 – column 10, line 30.

As per Claim 3, 16, 25.

Luskin et al ('987) further discloses the expected returns and the volatility of returns for each of the plurality of portfolios on the efficient frontier are determined based upon a simulation process, see column 9, line 22 – column 10, line 30.

As per Claim 5, 18, 27.

Luskin et al ('987) further discloses identifying a recommended portfolio assumes a constant-mix strategy, see column 7, line 46 – column 8, line 7.

As per Claim 6, 19, 28.

Luskin et al ('987) further discloses identifying a recommended portfolio assumes a buy-and-hold strategy, column 7, line 46 – column 8, line 7.

As per Claim 7, 20, 29.

Luskin et al ('987) further discloses defined contribution programs as portfolio to be managed, see column 1, line 20 – column 2, line 26.

As per Claim 8, 21, 30.

Luskin et al ('987) further discloses the set of financial products comprises one or more of bonds, stocks and mutual funds, see column 2, lines 32-34.

As per Claim 10.

Luskin et al ('987) further discloses the asset classes includes a core set of asset classes and a set of factor asset classes and wherein the method further includes conditioning the factor asset classes upon the core asset classes, see column 8, line 8 – column 9, line 11.

As per Claim 14.

Luskin et al ('987) discloses:  
generating return scenarios for each asset class of a plurality of asset classes based upon future scenarios of one or more economic factors, see figure 9 (807) and column 9, line 22 – column 10, line 30;

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a returns-based style analysis step for creating a mapping from each financial product of an available set of financial products onto one or more asset classes of the plurality of asset classes by determining exposures of the available set of financial products to each asset class of the plurality of asset classes, see figure 6 (900) and column 7, line 47 – column 8, line 7;

a step for determining expected returns and volatility of returns for each of a plurality of portfolios including combinations of financial products available from the available set of financial products, see column 4, lines 26-43 and column 9, line 22 – column 10, line 30;

a recommendation step for identifying a recommended portfolio of the plurality of efficient portfolios that maximizes an expected utility of wealth for a particular investor, see column 7, line 5 – column 8, line 7.

As per Claim 23.

Luskin et al ('987) discloses:

estimating returns for each financial product of an available set of financial products based upon the financial product's sensitivity to movements of a plurality of predetermined economic factors by utilizing a factor model, see column 4, lines 26-43 and column 9, line 22 – column 10, line 30;

determining expected returns and volatility of returns for each of a plurality of portfolios on the efficient frontier for the available set of financial products, the plurality of portfolios each including one or more financial products of the available set of financial products, see column 4, lines 26-43 and column 9, line 22 – column 10, line 30;

identifying a recommended portfolio of the plurality of portfolios that maximizes a particular investor's utility function at a predetermined time horizon taking into consideration the timing and amount of expected contributions and expected withdrawals, if any, see column 7, line 5 – column 8, line 7.

As per Claim 31.

Luskin et al ('987) discloses:

a forecasting means for generating scenarios for each asset class of a plurality of asset classes based upon future scenarios of one or more economic factors, see column 9, line 22 – column 10, line 30;

a fund decomposition means, communicatively coupled to the forecasting means for creating a mapping from each financial product of an available set of financial products onto one or more asset classes of the plurality of asset classes by determining exposures of the available set of financial products to each asset class of the plurality of asset classes, see column 4, lines 26-43 and column 9, line 22 – column 10, line 30;

a means, communicatively coupled to both the forecasting means and the fund decomposition means, for determining expected returns and volatility of returns for each of a plurality of portfolios on the efficient frontier based upon the mapping, each of the plurality of the portfolios including combinations of financial products from the available

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set of financial products, see column 4, lines 26-43 and column 9, line 22 – column 10, line 30;

a portfolio optimization means for identifying a recommended portfolio of the plurality of efficient portfolios that maximizes an expected utility of wealth for a particular investor based on the expected returns and the volatility of returns, see column 7, line 5 – column 8, line 7.

As per Claim 32.

Luskin et al ('987) discloses:

a storage device having stored therein a portfolio optimization routine to determine portfolio return scenarios for one or more portfolios including combinations of financial products from an available set of financial products and identify a recommended portfolio, see figure 3 (104) and column 7, line 5 – column 8, line 7;

a processor coupled to the storage device to execute the portfolio optimization routine to generate asset class return scenarios, a mapping, portfolio return scenarios, and identify the recommended portfolio, see figure 3 (102):

the asset class return scenarios are generated for each asset class of a plurality of asset classes based upon future scenarios of one or more economic factors, see column 9, lines 22–30;

the mapping associates each financial product of the available set of financial products with one or more asset classes of the plurality of asset classes, the mapping is generated by determining exposures of the available set of financial products to each asset class of the plurality of asset classes, see column 9, lines 22 - 65;

the portfolio return scenarios are generated by determining expected returns and volatility of returns for each of a plurality of portfolios on the efficient frontier based upon the mapping, each of the plurality of portfolios including combinations of financial products from the available set of financial products see column 4, lines 26-43 and column 10, lines 20-30; and

the recommended portfolio is identified by determining a portfolio of the plurality of efficient portfolios that maximizes an expected utility of wealth for a particular investor, see column 9, line 22 – column 10, line 30.

As per Claim 33.

Luskin et al ('987) discloses a machine readable medium, see figure 3 (104, 108) which cause a processor to:

estimate returns for each financial product of an available set of financial products based upon the financial product's sensitivity to movements of a plurality of predetermined economic factors by utilizing a factor, see column 4, lines 26-43 and column 9, line 22 – column 10, line 30;

determine expected returns and volatility of returns for each of a plurality of portfolios on the efficient frontier for the available set of financial products, the plurality of portfolios each including one or more financial products of the available set of financial products, see column 4, lines 26-43 and column 9, line 22 – column 10, line 30; and

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identify a recommended portfolio of the plurality of portfolios that maximizes a particular investor's utility function at a predetermined time horizon taking into consideration the timing and amount of expected contributions and withdrawals, if any, see column 7, line 5 – column 8, line 7.

***Claim Rejections - 35 USC § 103***

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 4, 17, 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Luskin et al (5,812,987) in view of Edesess (5,848,287).

As per Claim 4, 17, 26.

Luskin et al ('987) discloses the optimizing the investor's utility function, but does not disclose that the investor's utility function comprises a mean-variance utility function.

Edesess ('287) teaches mean-variance optimization is an old and well known alternative for portfolio optimization, see column 1, lines 21-40.

Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made to use mean-variance optimization as taught by Edesess ('287) as a design choice.

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5. Claims 9, 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Luskin et al (5,812,987) in view of Atkins (5,644,727).

As per Claim 9, 22.

Luskin et al ('987) discloses the generating return scenarios of a plurality of asset classes and limits on assets and payoffs, see column 4, lines 43-67, but does not disclose a stochastic process.

Atkins ('727) discloses a stochastic process as an improvement of optimizing, see column 48, line 45 – column 51, line 33 for the benefit of offering better solutions to investors.

Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made to utilize the stochastic process of optimization taught by Atkins ('727) in the invention of Luskin et al ('987) for the benefit of offering better solutions to investors.

#### ***Allowable Subject Matter***

6. Claims 11-13 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

#### ***Prior Art Made of Record***

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

GB 2 306 713 to Friend et al teaches asset allocation, risk tolerance and cash flow simulation, but does not disclose all the limitations of the claims.

Anonymous, Interactive Software Eases 401 (k) planning teaches a pc or kiosk accessible tool for financial planning, asset allocation, and acceptable rates of return, but does not disclose all the limitations of the claims.



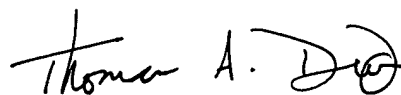
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**Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thomas A. Dixon whose telephone number is (703) 305-4645. The examiner can normally be reached on Monday - Thursday 6:30 - 4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Weiss can be reached on (703) 308-2702. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-7687 for regular communications and (703) 305-7687 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1113.

A handwritten signature in black ink, appearing to read "Thomas A. Dixon". The signature is stylized with a large, looped "D" and a cursive "X".

Thomas A. Dixon  
Examiner  
Art Unit 3629

August 26, 2002